

## Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Please amend claims as follows:

1. (currently amended) A diamond-coated silicon comprising:  
a silicon substrate manufactured to having a thickness of from 0.1 to 500  $\mu\text{m}$  ex-~~less~~ where said silicon substrate is selected from the group consisting of: single crystal silicon or polycrystal silicon;

said silicon substrate is coated at least partially with electrically conductive diamond to produce a diamond-coated silicon;

where said diamond-coated silicon is flexible.

2. (currently amended) An electrode  $\tau$  comprising:  
an electrically conductive support substrate; and  
a silicon substrate manufactured to a thickness of from 0.1 to 500  $\mu\text{m}$  where said silicon substrate is selected from the group consisting of: single crystal silicon or polycrystal silicon;

said silicon substrate is coated at least partially with electrically conductive diamond to form a diamond-coated silicon; and the diamond-coated silicon according to claim 1.

where at least one portion of the electrically conductive support substrate is bonded to said diamond-coated silicon.

3. (original) The electrode according to claim 2, where said silicon substrate is manufactured using a plate-like crystal growth process. ~~wherein at least one portion of the electrically conductive support substrate is bonded to the diamond-coated silicon.~~

4. (cancelled) ~~The electrode according to claim 2, wherein at least one surface of the electrically conductive support substrate is bonded to the diamond-coated silicon.~~

5. (currently amended) The electrode according to claim 2, ~~2,~~ wherein the electrically conductive support substrate is bonded to the diamond-coated silicon with an electrically conductive bonding material.

6. (currently amended) The electrode according to claim 3, where said electrically conductive support substrate is selected from the group consisting of: titanium, nickel, tantalum, copper, aluminum, indium, niobium, iron, graphite, stainless steel, carbon

steel, brass, Inconel, monel, Hastelloy, platinum, iridium, ruthenium, gold and silver plated on the above metals, carbon materials and alloys; carbon materials or alloys coated with an oxide of noble metals or noble metal mixtures by a sintering process. ~~wherein the bonding is performed by welding or adhesion.~~

7. (cancelled) ~~The electrode according to claim 4, wherein the electrically conductive support substrate is bonded to the diamond-coated silicon with an electrically conductive bonding material.~~

8. (cancelled) ~~The electrode according to claim 4, wherein the bonding is performed by welding or adhesion.~~

9. (currently amended) The electrode according to claim 2 where a portion of a surface of said electrically conductive support substrate is bonded to said diamond-coated silicon and a portion of said surface is exposed electrically conductive support substrate and where exposed electrically conductive support substrate is covered with a corrosion-resistant plastic polymer.  
~~5, wherein the bonding is performed by welding or adhesion.~~

10. (new) The electrode according to claim 9 where said corrosion-resistant plastic polymer is a fluorinated resin.

11. (new) The electrode according to claim 2 where a plurality of diamond-coated silicons are bonded to said surface of said electrically conductive support substrate to create a larger electrode.